THE SPECTATOR.

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☞ DR. P. T. KEMPSON, *General Agent, is authorized to make contracts, collect money, and transact other business for* THE SPECTATOR COMPANY.

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WE devote much of our space this week to giving a synopsis of the proceedings of the Northwestern Association of Fire Underwriters. We regret that we are unable to give the full text of the valuable papers read, but as one copy only of each was prepared, as a rule, that had to go to the official stenographer, and the journals represented could not obtain them. It has heretofore been customary to have the essays printed for distribution, and relying upon this, none of the insurance journals sent stenographers; hence we failed to obtain the text of the essays in time for reproduction in full this week. We shall publish them in future issues as they come to hand. The synopsis of the proceedings which we give this week will serve to whet the appetite of intelligent readers for the treat to come.

THE average young man of this country has an irrepressible desire to make money. He early learns to become a sincere worshipper of the Almighty Dollar. Studying untiringly the business habits and practices of the great men who have risen from poverty into the possession of wealth, he wistfully hopes that fate will lead him onward in the footsteps of these men to riches and luxury. It is a matter for some wonder, however, that in imitating the example of great men, young men do not invest in life insurance to a greater extent than they do. The most successful business men, careful and judicious investors—men whose lives have been characterized by the maintenance of conservative business principles, shrinking always from speculative ventures—are the best endorsers of life insurance. Young men, in pushing for the accumulation of money, are too apt to forget that death is an important element which must be taken into account in considering the science of business economy. The hazard of fire is appreciated and insured against; careful precautions are taken against robbery or other injury to goods in stock; but the insurance of the proprietor's life is too often neglected. As a prominent life underwriter recently expressed it, every productive life as truly represents capital and property as does any other thing capable of producing money. It is, therefore, true business economy to insure one's life, and the earlier this insurance is effected the cheaper will be the premium. In the case of a man having no persons dependent upon him for existence (and such persons are not often found in active life), a life insurance policy is always available as collateral security for the performance of a contract, and its full value can be relied on to help liquidate indebtedness in the event of death.

THE general agent of a prominent life insurance company recently requested us to compile a list, if possible, of well-known individuals who are carrying large amounts of insurance upon their lives. We accordingly addressed a circular letter to the companies, requesting them to give us the data for making such compilation. The result was what we expected; no company has the information regarding the amount of insurance carried by its policyholders. All the evidence on the point any one company possesses is contained in the application made for its policy; subsequent to the date of such application the policyholder may have increased or diminished the amount of his insurance in other companies, while those companies whose policies were undisturbed would know nothing about it. It would unquestionably be a good advertisement for life insurance if a list of well-known business men who carry policies on their lives for large amounts could be made, but we see no way of getting at the facts. The agent who addressed us on the subject might commence by giving us for publication the names of prominent men whom he has insured, and a little inquiry would, doubtless, reveal the amount they are insured for in other companies. This would be a start, at least, and if found to be valuable the list could be extended.

U. S. GILBERT, manager of the Sun-Watertown, is now in the West, endeavoring to arrange for the admission of the consolidated company to do business in the several Western States. It is predicted that several of those States will refuse to admit the Sun to do business under the proposed arrangement. As the Sun is not at home required to make official statements of its condition and business transactions, it does not desire to do so in this country, as the laws of the States generally require. Hence it has bought up the Watertown, and proposes to do business in the name of that company. We do not see why it cannot do so in most of the States without legal interference. The Watertown has a capital of $200,000 and assets exceeding this amount to a considerable extent. It is permitted to write upon any one risk to an amount equal to twenty per cent of its capital; unless prohibited by law from re-insuring in companies not admitted to do business within a given State, it can write to the full amount permitted and re-insure in the Sun. Where the laws of a State prohibit such re-insurance, it does not seem

possible for the Sun to do business unless it consents to file annual statements as required of other companies. Yet this seems to be something of a hardship. Complaints are constantly made that insurers cannot obtain the amount of indemnity they require, while here comes a company reputed to be the wealthiest in the world, desirous of writing liberal lines, but is prohibited from doing so because it does not wish to make public its financial condition, an exhibit not required of it at home. It has deposited $700,000 in this country already for the protection of American policyholders, and is prepared to maintain here the reserve required by law. This would seem to be a sufficient protection to policyholders, but the laws of several States go further and demand sworn statements. These statements amount to nothing more than the affidavits of the officers, for no examination is made to ascertain the truth of what they represent. It seems, therefore, that it is mainly a question as to what evidence the officials of the different States will require of the officers of applying companies. If the officers of the Sun simply declare under oath that they possess assets in excess of their liabilities, why is not that sufficient to satisfy the requirements of the law? What the public desires is indemnity for fire losses, and if the Sun provides this, the details of its business are not matters that interest the public. While we are of opinion that the Sun would have done better to have come to this country upon its own reputation, and boldly demanded the privilege of doing business, instead of seeking it indirectly under the guise of the Watertown, still, if it prefers to do business that way, and gives proper evidence of its financial ability to furnish the indemnity promised, we see no reason for interposing technical objections or splitting hairs over methods. If its managers state under oath that it has a million of dollars of assets in excess of its liabilities, we do not see why that is not quite as satisfactory as a detailed statement showing a similar condition, of the truth of which there is no evidence but the affidavit of the same managers. The question seems to be as to what evidence State officials will exact as to the solvency of the company.

THE NORTHWESTERN FIRE UNDERWRITERS.

THE Fire Underwriters Association of the Northwest met in annual convention for the thirteenth time at Chicago, September 6 and 7. The Convention was acknowledged by all to be a success. Of the 200 members of the Association, including representatives of companies from every section of the West and Northwest, 180 responded to the roll call, a positive demonstration that the officers had been unremitting in their efforts to secure a full representation. The interest manifested in the various topics included in the somewhat lengthy programme indicated that the members are fully alive not only to the requirements of their business, but to the abuses that are perpetrated in its name. The President, W. B. Cornell, referred to these very fully in his annual address, as did W. F. Fox in the essay delivered by him on the subject of "Underwriting, Its Object, Condition and Future." In other columns we give a synopsis of the two days' proceedings of the Convention, from which its general import will be gathered.

It was obvious from the programme sent out in advance of the meeting that the exercises were to be of unusual interest, as a new departure in the business of the Convention was indicated. Last year, it will be remembered, the Convention partook more of the nature of a prize debating society, wherein aspirants for literary honors competed for money prizes, in discussing the theory of fire underwriting. This year the prize-essay feature was entirely omitted, and topics of vital importance to underwriters were designated for discussion by the members. Specialists in the fields of science were also invited to illustrate points of material interest to underwriters, and this year was manifested a desire to substitute practical discussion and illustration for elaborate theoretical essays. The gentlemen selected to prepare essays for the occasion seemed to have caught the spirit of the officers, and to have treated their subjects from new stand-points. The address of the President, although longer than it should have been, was overrunning with excellent ideas and suggestions, which we hope will not be lost sight of and buried from view when published in the annual report. The address was full of good and practical sense, which might be taken home by the managers of companies and their agents and incorporated in their future business operations. Mr. Cornell is a thoroughly practical man, and the sentiments to which he gave utterance are the result of much investigation throughout the Western country. Having covered the territory comprised in the great Northwest, the suggestions resulting from his extensive observations are worth more than all the theorizing of a dozen home office managers, who seldom stir beyond the four walls that constitute the boundaries of their offices. Of the annual address, modesty forbids our saying more than that the writer, having found that pretty much all topics pertaining to insurance had been discussed at previous sessions, resolved to take a new departure, and indulged in a little good-natured satire of the unbusiness-like practices that prevail in fire underwriting. A discussion of the subject of fire departments and water supply was an interesting episode, introducing to the Convention Eyre M. Shaw, of the London Fire Brigade, who joined in the debate, and contributed not a little to the entertainment, if not to the enlightenment, of the members. Professor Tobin, of the Kentucky Polytechnical Institute, gave some very entertaining and instructive illustrations of the explosive qualities of various kinds of dust, with especial reference to the explosions in flour mills. These experiments were substantially identical with those made by Professors Peck and Peckham, of the Minnesota University, and fully illustrated in THE SPECTATOR two years ago. They prove conclusively that any fine vegetable dust is highly explosive under certain conditions, or, in the language of one

of the professors, will "ignite with explosive rapidity." C. C. Hines gave an instructive illustrated essay on "Isometrical Drawing, and its Application to Fire Underwriting." Other valuable papers were read, which were not only novel in themselves but unique in their treatment, the dominant idea of all the essayists apparently being to present something thoroughly practical for the members to take home and digest.

We had purposed in this hasty review of the work of the Association to read the members a lecture on their inattention during the delivery of the several important papers in the programme. After the first session, the members strayed away from the Convention hall, gathering in groups in the spacious lobbies of the hotel, till sometimes scarcely fifty were left within sound of the President's gavel. Speaking with a prominent member regarding this apparent discourtesy to the gentlemen who had prepared essays for the occasion, he said "this coming together once a year is, with us, a great social event; we are scattered over a wide territory, working in the same interest and for the same companies; our work and our objects are identical; it is a good thing for us to come together, shake hands, and talk over the situation as we find it in our several fields. We mean no disrespect to our speakers, but we can read what they have to say in the annual reports, while the pleasant, social interchange of sentiments and personal courtesies can only be done during the two days we are together, and, after all, this fraternizing together is the best result of these annual gatherings." Viewed from this stand-point, there was so much logic in the reasoning that we forego the scolding we had contemplated. Nevertheless, it is not satisfactory to a person who has been invited to address the Association, and who has spent much time in preparing for the event, to find himself addressing a "beggarly account of empty benches," while those who should be listening to him are exchanging social courtesies outside the door, or smoking convivial cigars in the adjacent lobbies. Something is due to those who give their time and their labor in the interests of the Association, and the least that is there due is a respectful hearing by the gentlemen who constitute its membership. To no one was the absence of the members so annoying as to those of their fellow-members who were selected to address them. The "outsiders" had nothing to complain of in this respect. We mention this matter now in the hope that members will take the hint, and next year give their attention to matters before the Convention during its sessions, and attend to the social features of the gathering during the intermissions.

Taken all in all, the thirteenth Convention of the Northwestern Association was the most successful, because the most practical, of any ever held. The proceedings were as full of meat as an egg, and, when they are officially published by the Association, managers cannot better improve their leisure time than by reading and taking to heart the valuable suggestions made by the earnest, practical workers in the field who are comprised in the membership of the Northwestern Association.

SPECTATOR SURVEYS.

THERE has been a remarkable cessation of fires in this city during the past week as compared with former periods of the same duration, and the companies are again taking breath and overhauling their city specials with a care and prudence quite surprising. It is noticeable that more special surveyors from out-of-town companies have been at work inspecting risks in this city and Brooklyn within the last three months than at any previous time in the memory of the local agencies. This is a good sign. The fire insurance business requires watchfulness beyond that of any other. A risk may be approved to-day and condemned to-morrow, and it is the changes which are constantly going on in a number of risks that demand watchfulness.

* * *

POLICIES are being placed here covering machinery and stock on a Cardenas (Cuba) sugar plantation, and waiving the clauses affecting insurrection, war and riots, excepting as an immediate cause of fire. Strangely enough, the companies have accepted several lines on these terms.

* * *

OFFERS of floaters on cotton (subject to conditions of average), covering fire risks in Charleston, Savannah, Norfolk and elsewhere, are becoming quite common, with few takers. The companies represented in the South are abundantly able to take care of all the desirable cotton risks to be placed in that quarter, especially as they protect themselves against excesses of re-insurance here.

* * *

A PRIVATE letter from London, recently received, states that Mr. T. W. Griffith, of Newark, N. J., is the latest American applicant for an English company. He is well backed in influential quarters, and among other companies he lately visited was the Manchester, where, however, he received a most emphatic "No." Mr. Griffith is the Newark agent of the Liverpool and London and Globe, but we were not before aware that he had aspirations to become a resident manager.

* * *

LONG ISLAND CITY, with its unpaid police and firemen, seems to be a good locality for our fire offices to avoid, and yet we learn there are many millions insured on property therein held by our best city and agency companies.

* * *

AN effort is being made in this city to place lines on the Missouri Pacific elevator at two and a half per cent, whereas the local tariff is $2.85. The companies are generally standing very firm for local rates in their writings on outside risks, and are deserving of credit for allowing policies to expire (without renewal) which they have carried for many years. Great care is especially necessary in regard to elevators. These risks are high rated and often very tempting, but in three cases out of four the offers made here are at cut rates.

* * *

THERE are numerous rumors this week affecting foreign companies and their intentions toward this country. After reading and analyzing the July statements, any foreign company whose managers can find any crumb of comfort in a prospective American business must have a magnifying glass with which to look at the profits and a receding glass of equal power with which to look at the losses. A story is in circulation that about ten days ago the Alliance of London, at the meeting of directors, decided positively not to entertain any applications for American business. This is about the fifth time the same story has been told as if it were something new. A similar remark will apply to the Royal Exchange and Manchester.

* * *

VERY few persons who have not carefully examined into the question have an idea of the enormous reduction in the amount of insurance procurable at this time on a mercantile risk, in comparison with seven or eight years ago. This difference is not confined to the dry goods district exclusively, as may be imagined by some, but applies to large areas uptown, and in quarters where a dearth would not be expected. A few years

ago, it was remarked as comparatively an easy thing to cover one and a half millions on a good mercantile risk up-town without going out of the city. Now it is impossible to procure half of that sum, and the difficulty is increasing rather than diminishing. It is the decreased lines which has produced the change, together with the withdrawal of companies.

* * *

One of the most excellent effects of the rule of the City Tariff Association discriminating against storage stores containing cotton, jute, hemp and other fibre, by charging a higher rate thereon than on the ordinary storage stores, is the steady removal of these comparatively combustible articles from many warehouses, which have been hitherto insured at the lower rates, despite the presence of cotton and jute. As soon as the storage warehousemen appreciated the fact that the underwriters were in earnest and that they would stick to it, the removal of fibre began, and has steadily progressed. No less than thirty-six stores which in May last were reported as "cotton stores" are now exempt from it and may be written at forty cents.

* * *

The Corn City Mutual of Toledo, Ohio, is writing New York risks in response to offers from Jersey City, and issues its regular mutual policies with a blank in the line referring to the deposit note, but leaving intact its usual wording relative to an assessment for losses, etc. The Corn City, we take it, is a small but respectable Ohio mutual, but whether its Ohio patrons will approve the assessment of their premium notes to pay New York losses is more than we can say. The venture appears to be of the deep-water sort.

* * *

It is stated that a certain city manufacturer, who recently sustained a loss, and held a considerable amount of insurance in companies not represented, sent forward his proofs of loss, accompanied by a sight draft on the companies for the amount of his claim. The companies not having authorized the drafts in question, promptly repudiated them, and now the manufacturer is in high dudgeon with his broker. That would have been a pretty high-handed game to have played with city offices, but with unrepresented companies it was a sheer waste of time and labor. It is shrewdly suspected that some city adjuster advised this course, in order to fill the soul of the assured with disgust when the inevitable protested drafts were returned unpaid. Shrewd but unwise.

* * *

There is a case pending in the city courts of some companies trying to recover money paid for a loss two years ago upon a claim which has been discovered to be fraudulent. A disagreement between partners has led one of them to turn State's evidence and expose the fraud.

* * *

One of the good effects of the Tariff Association is the thorough inspection of storage risks which it has brought about, with some excellent results in the removal of features of hazard not previously inspected.

CORRESPONDENCE.

TORONTO.

Quebec as a Fire Risk—A Canadian National Board—The Montreal Insurance Exchange and Toronto Board—The "Compact" System—London, Ont., Asking for the Compact—Notes of Companies and Agents.

[From Our Own Correspondent.]

Since my last letter very little of special importance to the fraternity has occurred in this part of Her Most Gracious Majesty's Dominion of Canada. Few losses of any moment have occurred in or about Toronto, but we have news of another great fire in Quebec. That city is becoming famous for large fires, and if the companies were conducted under the ordinary rules which govern, or ought to govern, contracts for protection against loss or damage by fire, Quebec City would soon lose its valuable (?) representation. I mean, of course, that the companies should put their heads together and charge an adequate premium for the risk they accept; but so long as insurance companies are content to follow the course that has hitherto been pursued, just so long will the citizens of Quebec (a sleepy French town) neglect to provide adequate fire protection and a full supply of water. The chief trouble is that companies, for some reason which no one can find out, will not act together, and just as a single twig is weak and a bundle is strong, so is each company too weak to act singly, and altogether "too-too" to act in a bundle. This brings us to the the question of Boards: National Boards, Local Boards and Boards of "Compact."

At the beginning of this year an attempt was made to form a Canadian National Board, but one or two strong companies would not come in unless every company, strong or weak, joined, and one or two of the weak ones were too weak to think of it, and the matter dropped. The subject has ever since been a live one, and local boards have been trying to spring into existence or remain there; and, wonder of wonders, Montreal at last has—I had almost insulted the great moguls of insurance in Montreal by using the word Board; but no, Mr. Editor, it is an "Insurance Exchange," whatever that may mean, with a secretary; and instead of commencing reform at home, where it was greatly needed, they applied their united strength to poor Winnipeg, in the far Northwest, and succeeded, I understand, in raising the rates in that live town.

The Toronto board has continued to exist in spite of the Montreal managers, some of whom come up here once a year and pat the local agents on the back, indulge in a pow-wow, partake of refreshments, and go home feeling, no doubt, that but for their wisdom and counsel at the "annual" there would be no Toronto board. Strange to say, however, during the rest of the year most of them wink at the slight deviations from the tariff employed by their Toronto agents to rob "the other fellows" of a good risk. The fact is, that the Toronto board has had an existence of some years, and, no doubt, accomplished much good; there is every indication of a break-up, mutterings and complaints, and brother accusing brother, and no one guilty, although the atmosphere around the insurance centre is thick with accusations of disloyalty and breaches of faith, and "no honor even among thieves," one fire-brand was heard to remark. The better class of agents are asking each other if there is not some plan—some workable plan—which would give the honest agent fair play.

The "Compact" which we read so much about in The Spectator and other live insurance journals, is like a dark horse to us here. We have heard of it, but do not know what it means. Your correspondent has gleaned this much from the pages of your journal: It is something with a manager (spelled with capital M), and opines it would hardly work in Toronto, for, bless you! every one manages his own way, and it would never do to suggest the idea of control to him; and the youngest man in the business or the newest comer in the ranks "knows it all."

The London board have not succeeded under their original form of organization, and actually are trying to persuade the companies to give them the "Compact" and a "Manager." Please note, it is the local agents who are asking, and this, in that respect, forms quite a contrast to Detroit and some other places on your side, where you describe the managers of companies as pouncing down on the local agents and imposing this new form of government on them. Let us hope London will get this new system, and that it will work so well as to cause the "disease" to spread all over our fair domain.

We have had two notable visitors since I last wrote you, viz: James Robb, of the Northern, and Captain Shaw, of the London (England) Fire Brigade. Our department turned out to "show off" before each of these "big bugs," and proved that the Toronto fire department was "ahead of all others." Speaking candidly, the fire department of this city is a most excellent one, and with the system of direct pressure for water, with Lake Ontario to draw from, it is often a question not of how much damage the fire may do, but how much damage the water will let the companies in for.

Manager Robb was very much pleased with our Queen City until he reached the Esplanade, which lies between the Grand Trunk Railway track and the water, and which is one long line of frame buildings, many occupied as manufactories, with several planing mills and numerous coal yards freely interspersed. This Esplanade lies along the south front of the city, and is a standing menace to its very existence.

Most of our managers and general agents have returned from their trips and holidays, R. N. Gooch, of the North British and Mercantile, and

chairman of the local board, being the last. He returned home a few days ago, looking wonderfully better for his visit to England and the Continent. Mr. Boult, late manager of the British America, is still in England on business for the company. I say late manager advisedly, for it is whispered on the street that the title of "manager" has been abolished in that company, and one of our morning dailies facetiously says "Who fired the last Boult?" and then answers its own question, "I, Governor Morrison."

The new secretary, Silas P. Wood, has arrived and taken hold of his work. He is quiet and gentlemanly, but evidently possessed of a good deal of latent force.

Another of our managers is about to take his departure for England. I refer to S. F. Magurn, the general agent of the City of London at this branch. Mr. Magurn goes home, no doubt, to report and take further instructions. He is understood to have done a paying business for his company, and has the reputation of being, if anything, too conservative in his management. One feature I may mention in this connection, that he has moved the company into a very commodious and tastefully arranged office, where he receives all comers with courtesy, and there is every evidence that he is building up his company on a sound basis, and is justifying the good opinion of the home management, who induced him to leave the Royal in England and take charge of the City of London's interests here. His confreres will wish him "bon voyage" and a safe return. I understand his trip is a purely business one, and will not extend beyond five or six weeks.

Incendiary fires seem to keep up their usual frequency, and reports are constantly coming in of the attempts to destroy property. Otherwise the business of fire insurance in Canada looks promising for the remainder of this year, as crops are good and prosperity smiles upon the steady-going Canadians.

Life insurance, in consequence of the general prosperity, is in a flourishing condition, and it seems the United States Life has been tempted to return to this field, the management to be in the hands of M. W. Mills who established his reputation when in the charge of the Northwestern Mutual. Meanwhile Stancliffe, of the Lion Life, lingers mysteriously in England and leaves the field open.

Accident insurance is also having a boom, and we have a new competitor in the shape of the Norwich Union Accident Company, which has appointed Alex. Dixon its general agent for Canada, with headquarters in this city. Mr. Dixon is also chief agent for the Norwich Union Fire Insurance Company, which company he has handled with credit to himself and profit to the company.

The Royal's last statement has appeared, and while the company—one of the most aggressive—has merely held its own during the past year, still the company makes a grand showing with its "largest net surplus of any company in the world. It is the surplus, Mr. Editor, which helps in a bad year, and has proved the wisdom of "piling up reserves." The Royal was one of the few companies which made any profit in Canada for 1881.

In conclusion, I think it is but fair to several American companies to refer to the Ontario Car Company risk versus the London Board. Correspondence is still going on in reference to the above, one side attacking and the other defending, and as your correspondent has been shown a list of companies, among which are some respectable members of the Guild, it is only just to give them an opportunity to rise and explain why they permit their agent in Detroit to break the rate on the Ontario Car Company risk as fixed by the London local board. We shall be glad to hear the views of the officers of these companies on the subject of underground insurance and violation of tariff rates.

MAPLE LEAF.

TORONTO, *Sept.* 9, 1882.

NEWS OF THE WEEK.

Thirteenth Annual Meeting of the Fire Underwriters Association of the Northwest.

FIRST DAY.—MORNING SESSION.

THE Thirteenth Annual Meeting of the Fire Underwriters Association of the Northwest was called to order, Wednesday morning, September 6, by President William B. Cornell. The attendance was the largest in the history of the Association, and over two hundred visitors were present during the two days.

The roll being called, the following gentlemen answered to their names: A. J. B. Abbey, Chicago; George W. Adams, Chicago; Charles E. Affeld, Chicago; D. F. Appel, Chicago; J. J. Barret, Louisville; Charles H. Barry, Chicago; E. J. Bassett, Hartford; J. F. Bates, Dubuque, Iowa; Ed. P. Beach, Springfield, Ill.; W. G. Bartley, St. Louis; J. J. Berne, Chicago; David Beveridge, Chicago; I. S. Blackwelder, Chicago; Charles E. Bliven, Toledo; W. J. Burns, Ottumwa, Iowa; Fred E. Burt, Detroit; R. B. Carson, Chicago; Eugene Cary, Chicago; James H. Caswell, Minneapolis; George C. Clarke, Chicago; C. F. C. Coombe, St. Louis; W. B. Cornell, Chicago; W. A. Cormany, Fort Scott, Kan.; Ralph Crable, Evanston; A. H. Cratsenberg, Madison, Wis.; R. S. Critchell, Chicago; W. D. Cooke, Chicago; J. L. Cunningham, Glens Falls; Holger De Roode, Chicago; J. H. De Wolf, Providence, R. I.; John Welsh Dulles, Philadelphia; S. S. Eaton, St. Paul; W. G. Ferguson, Chicago; J. G. Finnis, Louisville; W. F. Fox, Chicago; C. W. Fracker, Marshalltown, Iowa; Morris Franklin, Chicago; W. R. Freeman, Chicago; B. W. French, Chicago; H. A. Glassford, Albany, N. Y.; J. C. Griffiths, Madison, Wis.; John H. Griffith, Minneapolis, Minn.; J. B. Hall, Chicago; George W. Hall, Chicago; John C. Hall, St. Louis; A. J. Harding, Chicago; H. H. Hershey, Hannibal, Mo.; H. H. Hobbs, J. S. Holden, Chicago; C. S. Hallingshead, Philadelphia; E. A. Hough, Jackson, Mich.; S. R. House, Painesville, O.; John Howley, St. Paul, Minn.; W. P. Inness, Grand Rapids, Mich.; E. L. Ireton, Cincinnati; E. C. Johnson, Michigan City, Ind; William L. Jones, Milwaukee; R. H. Kerr, Leavenworth, Kan.; Edwin C. Lewis, Chicago; H. K Lindsey, Cincinnati; F. W. Little, Pleasant Hill, Mo.; W. J. Littlejohn, St. Joseph, Mo.; E. W. Lyman, Chicago; George M. Lyon, Chicago; C. W. Marshall, Urbana, O.; J. J. McDonald, Minneapolis, Minn.; G. J. McKnight, Cleveland, O.; L. D. Moody, Indianapolis; H. Moss, St. Paul, Minn.; J. M. Newberger, La Porte, Ind.; Daniel C. Osmun, Chicago; T. C. Parsons, Cleveland, O.; C. W. Potter, Milwaukee; A. P. Redfield, Chicago; George E, Redfield. Chicago; George S. Roper, Rockford, Ill.; W. F. Ross, Davenport, Iowa; H. M. Russell, Chicago; Simeon Schupp, Chicago; R. J. Smith Chicago; J. O. Lee, Chicago; T. H. Smith, Chicago; O. A. Southmayd, St. Louis; A. W. Spaulding, Chicago; Edward Stanbury, Cincinnati; J. H. Stevison, Chicago; H. J. Straight, Chicago; R. J. Taylor, Chicago; H. S. Tiffany, Chicago; J. F. Trezevant, Jr., Dallas, Tex.; Thomas Underwood, Lafayette, Ind.; S. E. Waggoner, Macon, Mo.; H. H. Walker, Indianapolis; J. A. Weinland, Indianapolis; David W. Wells, Chicago; F. C. Wheeler, Milwaukee; J. M. Whitehead, Chicago; J. L. Whitlock, Chicago; A. Williams, Chicago; Conrad Witowsky, Chicago; George A. S. Wilson, Chicago; J. O. Wilson, Chicago; T. J. Zollars, Chicago; E. A. Simons, Chicago; D. Ostrander, Milwaukee; T. R. Daniel, Oshkosh; C. F. Leavitt, Springfield, Mo.; L. Coon, Quincy; J. G. Mulligan, Minneapolis; H. C. Stuart, Nebraska; George H. Cook, Indianapolis; L. H. Fox, Detroit; J. H. Hough, Detroit; W. B. McCord, Minneapolis; G. W. A. Armstrong, Shelbyville, Ky.; H. H. Main, Madison; J. M. Hosford, Geneseo, Ill.; William Reed, Chicago; J. D. Wheelock, Wisconsin; W. H. Cunningham, Chicago; D. S. Wagner, Des Moines; Thomas L. Dean, Chicago; G. P. Theobald, Louisville, Ky; D. B. Warner, Chicago; H. H. Glidden, Detroit; J. J. Clark, Detroit; D. P. Gray, St. Louis; E. C. Preston. Detroit; H. F. Bustch, Michigan; H. B. Washington, New York; W. F. Lyman, New Orleans; H. S. Vail, Chicago; William Trembor, Louisville, Ky.

A letter was read from Mrs. A. J. Waters, presenting a bust of her late husband to the Association.

The President announced that he had received a letter from the President of the Polytechnic Institute of Kentucky inviting the Association to attend a meeting of the Polytechnic Institute at Louisville; that he had called a meeting of the Executive Committee, and it had been decided impracticable for the Association to accept the invitation. He had so notified the Polytechnic Institute, and had in turn invited them to send a delegation to this meeting, which invitation they had cordially accepted. The President then introduced Colonel Bennett H. Young, President of the Polytechnic Institute, who in a short and pointed address thanked the Association for its hospitality, and assured the members of a kind reception if ever they came to Louisville. W. R. Lyman, President of the Crescent Insurance Company of New Orleans, representing the Southern Association, was then introduced and made a few appropriate remarks.

He was followed in order by Charles R. Knowles, of Albany, N. Y., President of the New York State Board, and George D. Dornin, of San Francisco, representing the Pacific Coast Association. At this point, Captain Eyre M. Shaw, Chief of the London Fire Brigade, entered the room and was introduced by the President. He responded in a few words thanking the Association for its kind reception. Fire Marshal D. J. Swenie, who accompanied Captain Shaw, was also called upon, and made some timely suggestions in regard to the defective building laws in force in all the large cities in the country.

President W. B. Cornell then read his address, which we are unable to print on account of its length. It was full of meat and will repay a perusal when printed in the annual report of the Association.

A vote of thanks was extended to the President for his address, and a committee was appointed to consider and report upon his various suggestions.

The report of the Secretary and Treasurer, George W. Hayes, of Milwaukee, was read. It showed receipts during the year of $1,115.96, and disbursements of $1,122 87, and a balance due the Treasurer of $691.

After considerable routine business and the appointment of several committees, the Association took a recess until 2.30 P.M.

Afternoon Session.

Upon re-assembling, a resolution was offered allowing the delegation from the several State boards all the privileges of the floor, and it was carried unanimously. The next in order was the annual address by Col. Clifford Thomson, of The Spectator, which was printed last week. A vote of thanks was extended Colonel Thomson for his address.

D. Ostrander then began the discussion of the topic "What is the Best Way to Recompense Agents; by an Entire Direct Commission, or by a Part Direct and Part Contingent Commission on Profits?" He took the ground that it would be better for companies and agents to have a flat commission of ten per cent and a contingent commission of ten to twenty per cent on the profits at the end of the year.

James M. De Camp, of Cincinnati, took the other side of the question, and said that if companies would take pains to secure agents of integrity there would be very little, if any, trouble.

J. L. Cunningham argued against Mr. Ostrander's plan, the agent's field being too limited to make it pay, a small loss being sufficient to wipe out all his profits. The President also took this view of the question.

The Committee appointed to voice the sentiments of the Association on the death of Joseph S. Harris made its report, and it was adopted. W. F. Fox and several other members made remarks eulogistic of the deceased. A similar report was read on the death of Captain William Ashworth.

George D. Dornin, of San Francisco, Coast Manager of the Lion Fire Insurance Company, read a paper entitled, "Tidings from the Pacific Coast." He presented a cordial invitation to the members of the Association from the Pacific Coast Association to attend the next annual gathering of that body.

The Association then adjourned until 9 o'clock next morning.

An Evening Lecture.

In the evening Professor T. W. Tobin, C.E., Ph.D., of the Polytechnic Society of Kentucky, delivered a lecture to the members of the Association on "Explosive and Dangerous Dusts," which we print in full below.

ON FLOUR AND OTHER EXPLOSIVE AND DANGEROUS DUSTS.

Introduction.

In standing before you to-night as an exponent of science, I feel that an explanation at least is due, if not an apology, for the position I have assumed. I purpose to lay before you some revelations that for the past few months have been to me a source of unbounded interest, and while in communion with nature I foresaw, but realize now more fully, my inability to express the facts so clearly presented to me. I intend using my best endeavors, and will rely on the inspiration of your interested attention in supplying any shortcomings. Sensible of the importance and magnitude of my subject, I will lose no further time in introducing it, but assume the pleasant task now before me.

During the month of May last I was honored with an invitation to address the Kentucky Miller's Association on "Flour Explosions." Being a subject in which I had for many years been interested, I cheerfully undertook the preparation of a lecture, with illustrations. The experiments, although not new, for chemists well know the combustible nature of organic dust in a finely divided condition, yet so impressed my audience that I was more than repaid, on my part, in their interest and applause for the small amount of labor expended. In preparing that lecture there appeared to me certain conditions governing the combustible state of flour which hitherto had been passed by in investigating the appalling catastrophes that from time to time befall our national industries, in the form of mill fires and explosions. Many of my suggestions, the outgrowth of subsequent experiments, have been received with favor; and my theories, if such I may presume to term them, have had the endorsement of practical men before whom they have found their way. The desire to prosecute the truth, which is implanted in every scientific mind, has led me further, and I am here to report progress and court your criticism.

Dust Under The Microscope.

Let us together, then, retrace the narrative of these researches. I will first call into requisition that wonderful instrument that science plunges into the mysterious and opens out its inner secrets to the light of day—the microscope. As it would be difficult to show you individually the objects that I shall employ as illustrations, I made careful drawings and photographs of them, and by means of a powerful oxyhydrogen light will project magnified images of these upon the disk now before you. (The lecture room was here darkened and the subsequent microscopic illustrations, shown on a screen, magnified to many million times the size of their originals.)

1. I take first some ordinary flour, commonly known as "Graham meal," and we find that it consists of quite a miscellaneous gathering of various bodies. There are present: (1), the skins of the wheat-berry; (2), the hairs or "beard"; (3), cells of gluten, a wax-like substance, being the most nutritious portion of the grain; and lastly (4), the starch in various sized granules. This body forms the bulk of ordinary flour and flour dust. Now, in order to understand intelligently the natural placement of these parts of the wheat grain, I will bring magnified images of that body.

2. This shows: (1), the beard; (2), the skins, three in number, that enclose the internal starch or gluten; (3), at the bottom there will be noticed the germ, and contiguous with it the crease. Now, the first operation of the miller who has recourse to the newer processes of reduction is to clean, by brushing or agitation, the whole surface of the grain for subsequent operations, and 2d to break open this crease and get rid of the germ and incidental impurities that are usually there. In so doing a small amount of flour is made, but being charged with impurities, is blown into the dust-room. There are then two classes of dust; 1st, wheat dust, obtained from cleaning the surface of the grain, and 2d, the refuse flour dust discarded, because being mixed with germ and other foreign matter Although in my investigations I found two separate channels and outlets, the character and condition of both classes of dust therein were almost identical in physical properties.

3. This will show by a section of the grain the disposition of the parts already described.

4. Pure starch granules, as found in "arrowroot." This may be taken as the typical element in flour dust. We mark the compact spheroidal form of the granule. At a temperature of 140° F. in water it swells, bursts, and is converted into the well-known pasty mass used in the arts. In common with most organic matter starch is combustible, and contains normally about 18 per cent. of water.*

This amount varies, and, exposed to a dry atmosphere, may be considerably reduced. I take it as a rational deduction that the most rapid combustion of flour, attended with explosive violence, would occur when freed from moisture. The individual granules burst simultaneously, and the disturbance thus produced bringing new supplies of oxygen, would instantly determine the rapid consumption by fire of the entire mass. This fact will be discussed further on.

5. Immediately following the starch granules we have a quantity of dust obtained from the club moss, called "lycopodium." It is the seed or spore of that plant. Notice the near resemblance in size and structure to the starch granule; but it differs in one respect, in being of an oily nature, which (as our experiments will presently convince us) renders it very inflammable.

6. This is highly bolted flour, and as the microscope shows, freed from the husk, the beard, and even the gluten of the wheat, leaving nearly pure starch. We observe that there are three distinct qualities of the granule: (1), the giant; (2), the medium, and (3), the farina or starch powder.

7. This view will give a fair idea of what change takes place in starch on submitting it to a heat of over 140°; in other words, it is cooked flour. The granules have all disappeared, and in their place are irregular masses of amorphous "dough" or "paste."

8. Some dust collected from the "wheat dust room" shows starch, husk, fractured gluten cells, the beard, and other impurities; it also contains, generally, "fungi," or "smut." The dry and oily nature of this dust renders it more inflammable than starch.

9. Wood abrasions from an axle-handle factory, showing the fibrous and cellular texture of the minute particles of dust. This material is inflammable owing to its extreme dryness.

Combustion.

I will now as briefly as possible lay down the principles that are generally acknowledged by chemists as underlying the phenomena of combustion in organic bodies and apply them to the special instances under consideration. The substances which we will deal with to-night consist of three elements: oxygen, hydrogen and carbon. Although in variable quantities, the oxygen and hydrogen are always in the ratio of water, *i. e.*, eight parts by weight of the former to every one part of the latter; heat is capable of determining their union, and water is the result. Carbon or charcoal is thus left, and being incapable of existing in any but a solid condition, soon stifles further combustion. If, however, oxygen be added, either from the air or as a gas, perfect consumption of the body takes place. We know that a piece of wood, if an insufficient supply of air is present, can only become charred by the most intense heat known. This is the first principle that I will now endeavor to illustrate.

Experimental Demonstration.

Here is some hydrogen in a tube; it is very much the same as that burning from the lamps in the room. I plunge a lighted taper into it, and the taper is incapable of burning for lack of oxygen or air. Hydrogen, although a highly combustible body, will prevent combustion, and even suffocate this burning taper. I now add some air, neither in itself explosive nor combustible, and then heating the mixture, I get a deafening report. Beyond all question, I have generated an explosive body.

Then I will take some flour, and perhaps I should tell you that, like the hydrogen when free from oxygen or air, it is incombustible. Flour thrown on the glowing furnace will retard and even, if sufficient in quantity, extinguish the fierce fire. Like hydrogen, alone it is a non-supporter of combustion. Observe, I plunge a burning taper in this measure of flour, and, as you would predict, the taper goes out. Here is a substance, chlorate of potash, which is very rich in oxygen, and I cannot alone make it burn, as you may see. Two harmless bodies I mix: the essentials of combustion are supplied and brilliant fire is the result. Oxygen gas, always present in the air, an exceedingly active and corrosive body, is then the one thing needed to render these inert bodies combustible, and even explosive.

*Millers' Elements of Chemistry.

Moisture.

Water, in all its forms, is opposed to combustion, and its presence modifies the rapidity with which the consumption takes place. It is, I think, hardly necessary to illustrate this as a general principle, although in the sequel we shall find in it an element of great importance.

Now, it is by these simple principles that combustion in its varied phases, from the slow decomposition and decay of the green vegetable to the explosion of the modern flour mill, is governed. By the modification of them I think I can show you some interesting results.

Wood Dust.

Here is some dust from an axe-factory. It was obtained and has been preserved in a dry state. By means of a simple piece of apparatus I cause it to be blown about and thoroughly mixed with air. A flame is near it, rapid combustion takes place, and a column of fire of intense heat leaps up in the air, six or seven feet high.

Flour Dust.

This sack contains ordinary flour. Previous to the lecture some of it was placed in a drying oven and submitted to gentle heat. By this time much of the moisture usually contained in flour has been expelled; one condition has been filled to make the substance combustible. I next comply with the other and mix it with air. See the result! Mark the violence attending the combustion.

You may seem astonished, and ask whether this is flour alone. Yes; and from the same sack I use some more: this time not with the same result, for it is damp and the air cannot mix sufficiently to render it even inflammable.

Then we arrive at a very important conclusion. The violence of combustion is the inverse of the moisture of the dust experimented upon.

Other Dust.

We will now put the testimony received so far to the torture of further investigation. I have some lycopodium. You remember its near resemblance to flour dust under the microscope. It is not necessary to dry this as we did the flour, for it is protected by an oily waterproof coat and moisture cannot enter it; but it requires air, for I plunge a lighthed taper into its midst, and, as in other instances, neither will the powder burn nor will the taper. I urge some of it through the heated flame with this unexpected result: an all-devouring, an explosive column of fire.

Explosion.

The results obtained so far convince us that dust is inflammable in degree according to its dryness. No actual explosion has yet been obtained in our experiments. Perhaps it will be well to define the term explosion, since there has been objection raised to its use in connection with flour combustion by some writers whose opinion is worthy of respect. It almost seems ridiculous to imagine any one looking at the disaster at Minneapolis could so pervert the English language as to say that no "flour explosion" took place. Our dictionaries give us the definition of the word "to drive or burst out with a loud report or violence." Hitherto we have not, then, complied with this definition, and therefore had no explosion. Let us see if it is possible to obtain explosion, and by what means. When dry organic dust is heated to the point of ignition, the oxygen and hydrogen first combine to form water. Intense heat is thereby generated, and this heat acts in two ways: first, to char and finally convert the carbon into carbonic droxide gas; and, secondly, to expand the surrounding air. The gas and the heated air occupy considerably more space than in their first state, and the more rapidly these results are achieved the more nearly will the act approach the violence of explosion. The air, then, plays as important a part as the dust, and should the air space be confined, but insufficient to restrain its force of expansion, explosion in the full sense of the term takes place.

Explosion, Intensity of Combustion.

We can trace the various degrees of combustion in the many mill and factory fires that have been placed on record. Notably amongst them I will call your attention to two—the terrible disaster of Minneapolis, which occurred May 2, 1878, and the Hecker mill fire in New York, July 31, 1882. In the former we may reasonably infer that the air was dry and the dust pretty generally diffused throughout its entire extent, owing to the long continued and busy period the mill had been taxed with work. The wheat of that year, we are told, was hard and dry, and at the time of the explosion, 7.20 P. M., the air was chilly and the windows and openings generally closed. Here are conditions for explosion. In the latter I will take the testimony of the superintendent, Mr. J. V. Hecker, as recently given before the Fire Marshal of New York. He says: "The fire originated in the 'smutter' on the seventh floor. 'Smutters' are considered the most dangerous parts of the machinery of a mill, on account of the friction which may be produced by any foreign substance getting in and striking fire between the revolving cylinder and the case surrounding it. These cylinders were of stone and the cases of chilled iron. The smutters make from 250 to 300 revolutions per minute. The dust is sucked from under the smutters and forced by a fan into the (wheat) dust room through a spout about ten inches square. I think the fire was caused by a spark struck by friction in the smutters, igniting the dust and passing through the spout into the dust room and igniting the dust therein." That an explosion did not then occur, as in many other instances, was, I take it, owing to the fact that while the air in the mill was charged with fine dust, the dryness was sufficient to cause the flames to spread with lightning-like rapidity through the entire building, making the 500 workmen run for their lives. There was insufficient moisture to allow the dust to burn with the violence characteristic of an explosion. From the meteorological record of that day I find the barometer stood at 30.42 temperature, 82° F., and there was 82 per cent of moisture in the air, with cloudy sky. Thirty per cent of humidity that day, in all probability, saved the nation from a disaster far more terrible than happened in Minneapolis, or since the history of milling has been recorded.

Many other illustrations might be taken which would find an intermediate place in the degrees of intensity of combustion. You will call to mind the candy works explosion in the same city some years ago, that was an explosion of starch. The Ehret Brewery in August, 1881, experienced an explosion from the barley used in malting. Barley, in common with wheat and other cereals, consists principally of starch, and no difficulty is experienced in accounting for that phenomenon. The Pullman Car Works, at Detroit, 1880, had an explosion of dust in the spout used for conveying shavings from various portions of the factory to a place near the furnace. This spout is the counterpart of the dust room of the flour mill.

Conditions of Explosion.

We will now proceed with our experiments, and see if we can cause those substances which hitherto have shown themselves as highly combustible to become explosive. We will confine the air space and see the result. For that purpose I have before you a single piece of apparatus which, for a better name, we will call a dust or flour gun. It consists of a hollow shaft about seven feet high. At the top is a hopper, which by means of a paper cover I can close; at the bottom is a gas-pipe to which is attached a bunsen burner. By means of a trigger arranged near the top, I can cause a fine shower of dust to descend and fill the shaft. When the first portion of it reaches the flame and the shaft is filled with dust, ignition takes place and the entire column burns. It is necessary that there should be a plentiful supply of air. This is provided for in numerous perforations about the walls of the machine. If the dust is now dry we have all the conditions for explosive combustion. Let us proceed:

I place some lycopodium and turn the trigger. The top is blown off and takes fire, so intense is the heat. Here is some wheat dust from the dust shaft of a flour mill. The result is much the same, only lesser in degree, and yet sufficiently illustrates the principles we have discussed.

The Wet Bulb Hygrometer.

Before proceeding further in our subject, it is necessary that we should understand the construction and use of an instrument that will play an important part in subsequent line of thought I purpose now leading you. It is known by the modest title of "Wet Bulb Hygrometer," and its mission is easily related.

Its indications tell us that the atmosphere about us on the clearest and brightest day or night contains a large amount of water dissolved in it; that this watery vapor or gas is very transient in its nature, but that very seldom is the air fully charged, and never is moisture entirely absent. When the air has as much water as it can possibly hold we call it saturated, and in that condition we say it has one hundred per cent of humidity. Cold air requires less moisture to saturate it than warm air, hence elevation of temperature means increase of the saturating point.

It tells us that there is a constant variation going on—sometimes at short intervals and at others in long periods; and it further shows, as we are ready to anticipate, that there is a constant change in the capacity of the air and amount of moisture in it during the twenty-four hours of each day. As I take it, this atmospheric property plays an important part in our investigation of dust combustion.

In various localities the average capacity of the air varies considerably. "In the North American Continent," says Ganot, in his admirable text book on physics, "where the southwest winds blow over large tracts of land, the relative moisture is less than in Europe; evaporation is here far more rapid; clothes dry quickly, bread soon becomes hard; newly-built houses can be at once inhabitated; European pianos soon give way here, while American ones are very durable on the other side of the Atlantic. As regards the animal economy, the liquids evaporate more rapidly, by which the circulation and the assimilation is accelerated and the whole character is more nervous. In some parts of East Africa, on the other hand, the air is so charged with humidity that paper becomes soft and sloppy from the loss of its glaze, and gunpowder, if not hermetically sealed, refuses to ignite." As a suggestive thought incidentally to these statements:—are not the greater number of mill explosions in districts over which a dry atmosphere is known generally to exist? By the indications of this instrument we find regular changes during the day, there being maxima about 8 A.M. and 8 P.M., and a minima about 3 A.M. and 3 P.M. The signal service record (Louisville) for a few days will suffice to show this fact:

	6.25 A. M.	10.25 A. M.	2.25 P. M.	6.25 P. M.	10.25 P. M.
Aug. 1	90	79	59	72	88
Aug. 2	82	62	51	61	85
Aug. 3	90	67	57	90	93

Construction.

The instrument in construction is simple, consisting of two delicate thermometers, one of which is kept saturated by a reservoir of water. As the air loses or gains in capacity to dissolve moisture, evaporation takes place from the wet instrument. Proportionate to the capacity of the air to contain water will be degree of evaporation, and the extent of evaporation is indicated by the lowering of temperature. Thus, by a very easily constructed table, showing the difference of temperature readings of the two thermometers, a pretty accurate estimate may be made of the amount of water necessary to produce saturation and the amount already contained therein. The instrument may be easily constructed, or purchased for a few dollars at any first class optician's. It should, however, be accurately adjusted and the scales properly constructed. I will not occupy your time in explaining further how the readings are made, as that information may be obtained from any good text-book on meteorology, but at once proceed to detail records arrived at by its aid in my subsequent description.

Mill Fires.

The principles I have heretofore laid down, simple as they may appear, I felt convinced underlaid many of the fires and terrible explosions so disastrous to flour mills, and to their ignorance I conceived might be attributed, at least, some of the most awful catastrophes chronicled in our industries. Every year, to his sorrow, the mill-owner finds his risk of destruction of property and life growing greater, and I believe to-day there are insurance companies that would as lieve grant a policy upon a gunpowder magazine or dynamite factory as to the proprietor of a flour mill. I determined to submit these principles to a rigid test. Accordingly, with hygrometer and note book in hand, and the valuable co-operation of Mr. Chas. Ballard, a practical miller, I penetrated every crevice and chamber, from basement to roof, of one of the best-ordered mills in the country.*

I will not occupy your time in describing the various parts of an ordinary flour mill, but make use of the technical terms applied to the various localities. Suffice it to say that the mill in question has every modern improvement in milling machinery, is substantially constructed of brick, is run by steam power and well ventilated from all sides. The grain is received in the basement; the first floor is devoted to gradual reduction mills, and the second and third floors to bolting machinery and purifiers of the most approved description. It has a capacity of 180 barrels per day.

Mathematics cannot err; mark now the extraordinary records:

Record of Temperature and Humidity.

Record of temperature and humidity of the atmosphere at the flour mill of Messrs. Jones, Ballard & Ballard, Louisville, Ky., August, 1882:

* This mill is situated in Louisville, Ky., and owned by Messrs. Jones, Ballard & Ballard.

Date.		External.		Internal Humidity.			Weather.
Day.	*Hour.*	*Temperature.*	*Humidity.*	*Grinding Floor.*	*Bolting Floor.*	*Dust Shaft.*	
August 10.....	11 A. M.	70°	52 P. C.	67 P. C.	54 P. C.	------	Clear.
August 11.....	12 M.	80°	51 "	62 "	65 "	------	Fair.
August 12.....	3 P. M.	82°	45 "	60 "	53 "	------	Fair.
August 14.....	3 P. M.	89°	53 "	54 "	53 "	43 P. C.	Fair.
August 15.....	1 P. M.	81°	87 "	83 "	83 "	60 "	Rain.
August 16.....	1 P. M.	82°	83 "	87 "	87 "	63 "	Rain.
August 17.....	3 P. M.	79°	57 "	64 "	64 "	53 "	Clear.
August 18.....	3 P. M.	83°	48 "	52 "	52 "	38 "	Clear.
August 19.....	2 P. M.	78°	50 "	55 "	58 "	41 "	Fair.

The first unexpected result we notice in these records is that the atmosphere in both grinding and bolting rooms is moister than the air outside. On closer examination I soon discovered the cause of this. Each set of rollers used in reducing the grain, twenty-two in all, was heated owing to the friction and resistance in crushing. By the heat thus generated the normal moisture of the wheat was continuously being evaporated and escaped into the mill; the spouts near the rollers were bedewed with moisture and the flour doughed. Notwithstanding that the windows on all sides were open and the ventilation as thorough as possible, the entire atmosphere of the mill was thus kept in a moist condition

After carefully examining the purifiers, bolting chambers, wheat cleaners and other machinery for the dangerous element of dry air, I came lastly to the dust shafts. As I have already stated, in this mill there are two of these—one used for collecting the dust from the wheat cleaning, which is carried to the basement and there collected in a dust room; the other carries off the light refuse flour dust made in the first reduction of the grain. In making observations I found the amount of moisture in both these shafts and the various parts of each one differ so slightly that I did not deem it desirable to note the variation.

The Dust Shaft.

Could science speak plainer to us than in these facts? Recall the many mill fires and explosions that periodically visit us, and does not each narrative begin with the now easily interpreted incident, that destruction commenced at the dust shaft or in its vicinity? Here, month after month, streams of dry air, drier than the hot summer breezes, are urged with the velocity of a storm, depriving the wood and other combustible matter of its moisture; converting all that will burn into tinder-like fuel; dry air separating and buoying up the particles of drier dust until the fatal spark occurs and combustion ensues with the explosive violence, alas! too well known now to need description.

I do not hold that mills are blown up by the dust alone in the shafts; but I do believe that the fires generally originate there, and the local explosion caused thereby is often sufficient to fill the entire atmosphere of a mill with lodged and loose dust. A second charge is thus prepared for combustion, and the grand explosion occurs.

Dust shafts are, then, danger centres. Can there be any longer doubt in your minds? Is it necessary for me to suggest that they should be well protected and solidly constructed? Dry air in a mill, I am inclined to think, is little less dangerous than coal gas escaping in the air. Why make these shafts of light match boarding? Will you longer, in face of these deductions, use gauze and canvas doors communicating with them and your mills? As I stood one day near by one of these doors, my hygrometer showed the dangerous enemy stealing into the dust-charged atmosphere of the mill.

Having accepted the fact, which I take for granted is now settled in your minds, that the dust spouts and flour shafts are dryer than the surrounding atmosphere, let us see if science can explain why this should be so. Nearly all dusts are well known to chemists to be hygroscopic in their character. Flour, especially, will divest moisture from the air. But we have seen also that in the process of grinding, by the heat generated in friction, a large amount of the normal moisture of the grain is driven off and the subsequent heated flour must necessarily be abnormaly deficient in water. The percentage of moisture in the dust shafts would be, of course, governed by the humidity of the external atmosphere as we find it shown in the table, set forth.

The Barometer.

There is another interesting relation between the dust and the atmosphere as its medium which is at least worthy of a passing remark. Do you know that dust is sometimes lighter than at other times; More correctly, the atmosphere in its variable density causes the light particles of floating matter to become more or less buoyant? Let me illustrate the statement by a familiar incident: Have you not noticed at sometimes, generally on a dry day, how the smoke rising from the chimney will rise and be buoyed up in an almost vertical direction—how on those days the very dust in the roads hangs about and refuses to settle? The barometer on these occasions will be high, showing that the air is dense. Another day the air will be charged with moisture; the smoke hangs about the ground—no dust in the air now, for the air is too light to buoy it up; the barometer is low, and rain is probable. Is it only reasonable to infer that during a high barometer the lighter particles of flour are reluctant to settle, and floating in the air add to the many dangers of a flour mill? I make this brief allusion to a probable cause conducive to fire and explosion. Time will permit me to do no more.

Deductions.

Gentlemen, the accurate diagnosis of disease points to a line of remedy. Have we not enough information on the cause of dust explosion to suggest a mode of remedy? It may be that we have not yet gone to the bottom of the mysteries involved, but we have, I think, indications enough to adopt a line of treatment.

Let me, as I have presumed so far, in the interest of science suggest:

1. That dust rooms are danger centres and should be built, if possible, of brick, as you would build a smoke-stack, and all communicating shafts and doors be of sheet metal.
2. That as in the long period of drought of summer, nature moistens the dry forest with rain and dew, so our parching winds constantly blown through shoots, shafts and dust rooms should be daily, if practicable, charged with vapor or steam.
3. Keep the mill free from superfluous dust and flour.
4. As dry air is the miller's enemy, let him learn to use the hygrometer, and on its indications adopt such methods as he may think best to drive it from the many lurking places in his mill.
5. In dry weather, when the air is dense and thick with floating particles, let him not over-work or strain the capacity of production. Over-taxing work has often preceded disaster.
6. Never use open lights in the mill if it is possible to avoid them, and get as much ventilation as possible.

Conclusion.

Before concluding the subject I have attempted to lay before you, the cause of events makes it necessary to add one more record. After I had formed the line of thought and made observations at Messrs. Ballard & Co.'s mill, an incident occurred that riveted my interest, as I think it will yours. After hunting nature to the utmost limits of investigation, I was rewarded beyond measure in an occurrence which took place unexpectedly to all, but unfortunately for my friends in labor, the Messrs. Ballard.

When lecturing before the Millers' Association of Kentucky, I made the following remarks: "Could we have had a register of the state of the atmosphere in the unfortunate Washburn mill, Minneapolis, immediately preceding the explosion, I doubt not that it would have shown a marked absence of humidity." Science has permitted me to realize this, for on August 22 my closing record at the mills reads:

Date.	Hour.	External.		Interior.	Weather.
		Temperature.	*Humidity.*		
Aug. 22..	11 A. M.	82°	60	Wheat dust shaft and adjoining bin on bolting floor now in flames. Fire confined to upper portion of shaft, but fierce and destructive.	Fair.

What originated the fire I pass uncommented upon. The fact that the dust shaft burned with rapidity and that the entire mill was not a wreck from either the flames or explosion, I leave for your thoughtful consideration. On the spot where I had made my observation in the wheat dust room from the last time I visited the building, there remained only the ruins of property estimated from eight to ten thousand dollars.

SECOND DAY.—Morning Session.

The meeting was called to order at 10 A. M., President Cornell in the chair. A letter was read from J. M. Dresser, ex-President of the Association, stating that the condition of his health would not permit his attendance. A committee was appointed to draft resolutions of sympathy. The President said that the very large attendance at this meeting was an evidence that the Association was growing. Over eighty names were added to the list during the two days, among whom were W. R. Lyman, H. S. Vail, H. B. Washington, H. F. Burtch, E. C. Preston, W. A. Reed, J. J. Clark, H. H. Glidden, D. B. Warner, W. A. Noyes, T. L. Dean, W. H. Cunningham, C. A. Van Auden, J. D. Wheelock, J. E. Graham. J. M. Hosford, Geo. A. Armstrong, W. B. McCord, W. R. Kerr, J. A Miller.

The "Compact" system was next brought up for discussion, and the President requested George M. Lyon to explain the system now in operation in several cities of the West. We have already acquainted our readers with the salient features of the system and will not repeat them here. Mr. Lyman said that in the South they had just commenced organizing State boards. There were difficulties attending them there which are not met with in the Northwest. One was the small number of resident special and general agents in the South. They were making some headway, however. Mr. Dornin, of San Francisco, explained the schedule system in use on the Pacific coast.

There were four distinct basis rates on the four classes of buildings and extra charges for deficiencies and exposures. Messrs. J. O. Wilson, De Camp and Griffiths all argued in favor of the schedule system. J. C. Trezevant, of Dallas, Tex., was in favor of having the rating done by special commissions of experts, paid by the companies, *pro rata* to the business they do. These agents should work in harmony with the local agents. The system was in use in Texas, and worked to the satisfaction of all concerned,

J. G. Finnie, of Louisville, read a paper on "The Field *vs.* The Office." Touching lightly upon the accomplishments which are indispensable to a special agent, he said that, as one of them, his chief complaints to make against the men in the central office was, that they were usually more theoretical than practical. To remedy this, he advised that the office men should go out into the field once in a while, and see for themselves what the field agent has to do. They should be more careful, too, in their selection of their local agents, special agents and adjusters. Since these officials are the real representatives of the companies before the public, special care should be taken to secure those who are honest, cautious and intelligent. The paper argued that Western insurance men were better qualified to manage the Western business of Eastern companies than the managers of the home offices themselves. The English companies have

seen the good sense of this, and had entrusted the management of their American interests to their American agents. The speaker urged that men should be trained for the insurance business as for any other business or profession, and should be taught that to their honor is intrusted interests involving much money.

"Underwriting, its Object, Condition and Future," was the topic of the next paper, read by Mr. W. F. Fox, of Chicago.

The business of underwriting, ranking among the most important in the world, can hardly be magnified in words. Brought into existence by the spirit of civilization, it has kept pace steadily with it. Underwriting was at first brought into existence by reason of the perils of commerce. Capitalists were willing for a consideration to assume a part of the risk. Fire insurance takes its origin from marine insurance, and, like it, is based on the principle of indemnity to the insured. It is the great financial guarantor against loss to business and private accumulations. By the credit which it establishes it expands business almost beyond conception, distributing the losses of the few among the many. It stimulates the poor man to beautify his home, and is thus an incentive to accumulative habits and good citizenship. The business of underwriting is also one of profit to the insurers; so that the early characteristic of underwriting, the insured seeking the insurer, is reversed, the companies hunting for business, leading to excessive competition and mismanagement. Money-making should not be the only object of underwriters. They should look more to the permanent establishment of business on a good, honest basis, and indemnity to the insured than the matter of mere profit. They should bear in mind that value, not things, should be insured, and a minute subdivision of the policies with the view of obtaining large salvage is in contravention of this rule, and is not broad underwriting.

Insurance suffers from lack of knowledge of the business and selfish and bad management. At best it is an uncertain business, affected largely by accidents, and the best data of knowledge should be eagerly grasped. A good many companies fail of success because of selfish management. Rates, which are the basis of public confidence in the business, should be made uniform, and regulated, as far as possible, by broad and easily understood principles. Next to this, the method of adjusting should receive the attention of the companies. Losses should be always adjusted instead of settled. Adjustment should be according to rule, keeping indemnity for loss prominently before the mind. All other methods of settlement are guess-work.

The future promises well for the insurance business, but it depends upon the underwriters themselves; whatever improvement it experiences must come from them. Under the broader conception of the business the policy of the future will be broader in its nature and less encumbered by minor conditions. The business will also be confined to fewer companies, thus doing away with the present harmful competition, and improving the business. Buildings will also be more substantial, losses less frequent, and the drain upon insurance capital less exhaustive.

In this advance in the business each underwriter should feel that he has an important part, and should act accordingly.

The next in order was reports from State boards. J. A. Weinland of the Ohio State Board, reported that his board had been in a comatose condition for the last year, but efforts were being made to resuscitate it which promised success.

Mr. Sieders, of Indianapolis, reported from the State board of Indiana, which was organized three years ago. The board had had a good result in establishing equitable rates and improving and raising the standard of business. It has also been a stimulus to the organization of local boards, fifty-eight towns being now supplied with them.

W. P. Innis, of Michigan, reported for the board of his State, which was organized a year ago, and which is in a highly satisfactory condition at present.

A communication was read from the secretary of the State board of Iowa, stating that the body was in a prosperous condition.

Mr. J. C. Griffiths, of the State boards of Wisconsin, Minnesota, and Dakota, reported a like prosperous condition.

Gen. Innis reported from the committee to which was referred that part of the President's address as related to over-insurance. The report stated that the subject was one of vital importance, affecting not only the insurance and the assured, but persons not insured, by exposing them to danger from adjacent incendiary fires. The report urged that the question be fairly brought to the notice of the companies, and their earnest co-operation to mitigate the evil invoked. The committee agreed with the President that over-insurance was a great incentive to incendiary fires, and, when not inducive to flagrant crime, tended to encourage carelessness on the part of the insured. The report suggested as a partial remedy that the words "the other concurrent insurance permitted" be stricken from the policies, and that the companies insist that the amount of concurrent insurance be limited in the policies, the maximum limit of insurance being eighty per cent of the value of permanent buildings. Another remedy suggested was that the provisions now in force regarding other insurance be strictly construed by the agents, and that the name of each company, and the amount of concurrent insurance expected from them, be entered on the application. The report urged that these suggestions be transmitted to the managers of the companies and the State boards, and that they be urged to adopt them.

The committee to which was intrusted the work of preparing a constitution for the Association under its articles of incorporation, which have been procured since the last meeting, made a report. The constitution as reported by the committee was adopted without debate.

The Association then adjourned for dinner.

Afternoon Session.

Upon re-assembling, the Association listened to an invitation from the Chicago Sugar Refining company to inspect its glucose works. It was referred to the Chicago Board of Underwriters. The following paper upon "Fire Department and Water Supply," prepared by L. D. Moody, of Indianapolis, was read by the Secretary.

With the historic view of fire departments or the relative merits of the different systems of water-works, it is not the purpose of this paper to treat. The genius of invention has been prolific in supplying a genius to fight fires. In all the cities of considerable size in this country the hand-engine has surrendered to the modern steamer; the bucket brigade to the Holly and analogous systems; the cistern has disappeared in the huge reservoir; and the electric alarm and the educated horse enable the fire boys to reduce the time within which fire may be reached to a minimum. To utilize and render thoroughly efficient these agencies is a problem vital to our interests, but not less to the business man, the municipality, and the country. The annual waste by fire is very great, exceeding $100,000 000. This startling loss falls, in the end, upon the country. Its bankrupt insurance companies check prosperity and often aid and prolong financial panic. The underwriter restores no values. He is but the medium to distribute the burdens among the many. He saves the individuals and helps to relieve the distress when the conflagration sweeps the city out of existence; but if true to himself and his mission, the needful is drawn from the property exempt from fire, for there is no escaping the conclusion that the property that does not burn must pay for that which does if the companies are to survive. The frequent observation that underwriters are the only losers when property fully insured burns is therefore erroneous, if not worse. The responsibility for the increasing magnitude of losses is, to a large extent, with the business man, the propertyholder and upright citizen, and with the underwriters whenever they fail to exert a united influence in removing causes of conflagration and to make departments more efficient. There is a common obligation to devise and enforce means and methods which will reduce losses to the lowest possible point within reach of human application and endeavor. Out of these general propositions grow the subjects of building laws and materials, fire limits, the exclusion of petroleum and its products and other inflammable substances where they endanger greater values, greater individual care and precaution, as well as some legalized and rigid method of investigating the origin and cause of fires; but their discussion in this paper would hardly be pertinent, and, if so, would lead it to a length as discouraging to you as the efforts of some departments to put out fires.

The difficulty at most of the towns and cities having water-works is not so much in an inadequate supply as in deficient means and want of skill in using it. The efficiency of the department depends very largely upon the chief. When he is intelligent, experienced, skillful, energetic, and unwavering in fidelity, his forces will reflect his skill and intrepidity. He is influential with the city government because intelligent and practical in pointing out the defects, both in water supply and equipments. There are some such chiefs. You can locate them. You know the towns where you write with little fear of sweeping fires, and with confidence that the ordinary business hazard will not make you a total loss. There are others, and greater in number, where there is much paraphernalia and the claim of the "best fire department in the country," but the hunt for salvage after their work is discouraging. It is not uncommon for fire to escape from the building of origin, invade neighboring buildings and blocks, and cross streets, and end its destructive work in serious loss. You can readily name some of these points. The want is skillful chiefs—men of a high order of executive ability, of courage, and physical endurance, quick of perception and swift in execution; familiar with the construction of buildings, their stairs and hatchways, and all means of approach. There is no office

within the gift of the city more important than that of the fire ch'ef. Its importance, in connection with our business, can not be overestimated. In the vast majority of towns the rate assumes a degree of efficiency not warranted by the fact, as attested by the numerous and serious losses. Is it not time for underwriters to teach the lesson that preventives are less expensive than cures? That precautions have a well-defined value in their minds, and that neglect as certainly has its penalties?

The proposition that the fire department should be exempt from the demoralizing influences of partisan politics carries with it all the force of an anxiom. There can be no proper alliance between fire-fighters and fighting factions, and they should be, by universal consent, entirely divorced. To subject the chief and his force, as a rule, to removal when one party goes in and the other out, or to retain party favorites without qualification, is to invite conflagration. It is worse than Neroism, since it combines with culpable indifference the vulgar ambition of supremacy for spoils. The fire chief and his force should be made to realize that they owe their positions to personal merit, the result of acknowledged ability, experience, and fidelity; that it matters nothing to them how political currents ebb and flow; that their business is to study fire—fire in its wildest freaks, and to subdue it for the public good. Until such becomes the fact, skillful chiefs will continue to be scarce, for experience is the only reliable school, and while the tenure of office is as frail as that of the Mayor or Council there is little inducement for competent men to incur the personal peril of education to be turned out after the next election. With such abuses and resultant insufficiency in the departments, the cost to companies by the frequent failure to confine the fire to the building in which it originates will continue to be large. We have yielded the rate. The business man and propertyholder were clamorous, and the agent who cannot dispose of a gold dollar for more than seventy-five cents in currency—and he is in every town—and it is our fault—readily consented. The rate on stocks went down with that of the building, when the reverse should have been the rule, especially on sensitive stocks. The question is whether companies will continue to pay the cost out of their reserves and capital, and if so, how long can they stand it?

There are many volunteer departments in the country. Their efficiency depends, to a large extent, upon the material interests which the members have in the preservation and growth of the town. As I have before observed, the business man is, or should be, concerned in preventing fires, and whenever the taxable wealth will not justify the expenses of a paid department he should accept service in the volunteer ones. Before the modern methods of fighting fires were introduced, men of wealth and high social position, men of the learned professions, as well as the mechanic and artisan, took volunteer service in the department. This should be the rule now. It will excite a more general interest among all classes of citizens in not only putting out fires but in preventing them. Organization begets care, and the more character there is in it the more perfect it will be. There are some volunteer departments composed of the best men in the town, and I venture the opinion that all such will compare favorably with the majority of paid ones under the abuses to which I have alluded. There is a vast number of towns and villages where there are no facilities and no organization. Business men in all of them ought to interest themselves in the organization of fire companies. The cost of arming a bucket brigade with rubber or leather buckets is inconsiderable and, therefore, within the reach of all. With indifferent facilities a well-organized fire company can accomplish much in preventing the spread of fires, and often save the individual risk. Would it not be well for underwriters to encourage this as opportunity offers? If these simple organizations should be made the pretext for a reduction of rate, can not we remedy this by dispensing with the services of that class of agents I have before referred to?

At the conclusion of the reading of the paper, the President of the Association called upon Captain E. M. Shaw, Chief of the Fire Brigade of London, England, who was present, for remarks upon the subject of the paper. With a modest preface concerning the diffidence which he felt, under the circumstances in which he was placed, Captain Shaw proceeded to discuss the paper, which, he said, had given the heads of what would be a very comprehensive discourse on the subject of fire departments, without, however, threshing out much of the straw. This may have been a wise omission, for it would stimulate discussion. He had been struck with some of the points raised in the paper, and particularly with the first one about the discarding of the use of hand fire engines. This was a matter of a good deal of importance, one which he thought did not receive the attention it deserved. The old style of hand-engines had almost disappeared from America. "If you will alow me to say it," he said, "without giving offense to any of my friends, the chiefs of the American fire departments, or to Mr. Swenie, I consider that in the United States you have made a great mistake in abandoning the use of the hand-engine." "In London," he continued, "we had in use by the department 115 hand-engines and only thirty-six steamers, and found the former very efficient in checking insipient fires." Concerning the second point of the paper, the combined responsibilitity of the insurance companies and communities in preventing disastrous fires, the captain agreed with the author. The object of the existence of insurance companies was to make more from premiums than they paid out on losses. They could not be expected to leave money in a town for the good of the town, and if the companies were a benefit to the community, they should be encouraged and their objects helped. In regard to legal inquiry into the cause of fires, the captain thought this a good thing, perhaps, where the fire is disastrous or entails loss of life. But in a small town or in small fires, it was neither profitable nor convenient. In some continental countries, he said, the system obtains, and the inhabitants are often put to a good deal of annoyance by the constant investigation into the cause of small fires. In London there is no investigation except in cases where there is loss of life, partly because it would be a very expensive system, as its cost would not be much less than £50,000 per annum, which might be more profitably spent in improving the fire brigade. Captain Shaw dwelt at some length upon the topic briefly touched upon in the paper—the qualities of chiefs—as, he said, honesty, vigilance, intelligence and courage could not be too highly estimated in the selection of a chief. And it gave him pleasure to say, that having been in "this town" but a day or two, he opined that its inhabitants ought to be satisfied with their fire chief. He had been much impressed, indeed, with Chief Swenie's comprehensive knowledge of the streets of the "town," and of the various kinds of business carried on in its buildings. All admit the necessity of courage and endurance in firemen, but to tell the truth these were not hard to find in any community. Men with these qualities in them could be found almost everywhere. But there is the one only quality from which all these proceed—that is the power of discipline, and it was in this that he thought American firemen defective. Of course it was difficult in places and towns away from the centres of commerce to enforce severe discipline. And this discipline is needed to organize and make efficient the endurance and pluck characteristic of Americans and Englishmen. Again, he was pleased to compliment "this town," and say that he thought it probable that discipline in the fire department here was probably as perfect as it could be made in "an outlying town"—he hoped nobody would resent that expression, for Chicago was really an outlying town compared with London or New York.

What he meant by discipline was that each member of the department should have a complete and entire knowledge of every part of the business. In this respect there was a great difference between the old world and the new. Each man in the London brigade was subjected to the most careful training before he was allowed to attend a fire. When he had mastered some branch of the profession he might be allowed to go to fires a few times, but would not be allowed to advance a step beyond his position in the department until he had again gone to the headquarters and submitted to careful and rigorous instruction and practice with some hitherto unfamiliar piece of apparatus, for the captain was a believer that all instruction must be given at headquarters—that nothing could be learned at a fire.

The power of councils, boards and commissioners to discharge the chiefs of fire departments was antagonistic to the best organization of the force. That the office of Fire Marshal should be a continuous one, was, in the speaker's mind, highly important. He, himself, had held his present office for twenty-one years. His certificate of appointment stated that he should be retained in office during the pleasure of the board; but he knew that he would never be deposed from his office, save through his own unfaithfulness to his trust. He regarded the office as his—the same as any article of property, only to be lost through his own fault. And this was true of the chiefs of brigade of other European cities. In the United States it was different. Here there was constant change, and its effects could not but be bad.

In regard to volunteer fire departments, the speaker could not but agree with the paper. He thought that volunteer companies, if they could be got together and the rowdy element eliminated, would be just as efficient as paid companies. Capt. Shaw gave an account of the establishment over which he had the honor to preside. Duriug 1881 there had been 2376 alarms, of which 240 had been false and 145 for chimney fires, leaving 1991 fires during the year. Of these, 167 had resulted in serious damage and 1824 in moderate damage. The per cent of serious to slight fires had been 25 in 1866. It had been reduced to 11, 10, 9, and in 1881 to 8 per cent. He regarded that as a satisfactory exhibit. It might be reduced still further, but it should be remembered that London is a peculiar city in regard to fire risk. It would make some American underwriters throw up their hands in amazement and horror to see some of the old buildings of London. There are warehouses there one hundred years old, and very lightly and poorly constructed, which contain fabulous amounts of property. There

are three or four of these fronting on a street so narrow that two vehicles cannot pass, and each of them probably contains goods to the value of £1,000,000. The London brigade has to adopt itself to this state of things, and to protection of dwelling-houses and shops—"stores you call them"—and so its range of work was greater than in any other city, according to the captain.

Turning again to the consideration of the characteristics of American fire protection, the captain commented upon the restrictions placed upon the chiefs by the boards and commissioners of fire. These restrictions tended to relieve him of a great deal of the responsibility which he should have, and in some measure, the captain thought, might account for the great conflagrations of America. It was difficult for him to say how much a chief should be free from supervising control, but the captain was free to say that, unless he is the originator of all the apparatus used, and the teacher of it to those under him, he did not see how he could be held responsible for the efficiency of the brigade. He had been gratified at the intelligence of the Fire Commissioners of New York, and he supposed they took the credit for the efficiency of their department, but he did not see how they could take this credit unless they relieved the chief of his special work. It was strange how a chief could be held responsible for conflagrations unless he had charge of every part of the business. The captain procured and carefully read the accounts of all the fires that amount to anything in all the cities of the world. When he looks at the excellently-constructed buildings of this country, he is amazed with the magnitude of its fires, and if he was not forced to believe the uncontradicted accounts of them in the papers he would have believed them impossible. Referring again to his own brigade, the captain said that it employed less men, in proportion, than the American departments. It paid more attention to the matter of fire escapes than was done here, and by their aid, in 1881, there had been 114 people saved of the 154 exposed to danger, which is a pretty good record. There was much less water used to extinguish fires in London than in American cities. For instance, there was thrown by the London engines in 1881 but 17,000,000 gallons of water, while during the same year in New York, 33.000,000—almost twice as much—was thrown at fires, and this in face of the fact that the former city is three times the greatest, with higher buildings and heavier stocks. In this comparison he found much food for reflection. One explanation of it might be found in the fact that he uses smaller nozzles than they do in America. His biggest nozzle is but an inch in diameter, while the smallest used in New York is two inches.

The arrangement of the London brigade was much different from that of American departments. It was not divided into companies as here, but a certain force of men were detailed to different stations in certain parts of the city. They lived here with their families, so that they are always available. They also have four floating engines, which the captain recommended to the consideration of American cities upon the water-side, like New York and Chicago. They can be fitted up with little expense, and are very effective. The system of fire alarm telegraph in London, the captain explained, was slightly different from that of Chicago. It was not so concentrated. On the contrary, instead of one central office there were fifty-six stations, so that it was not possible, as in Chicago, for an accident at any one office to paralyze the workings of the whole system.

Captain Shaw's speech was received with applause.

John J. Covington, of Cincinnati, read a paper on "The Adjustment of Fire Losses." The vast number of losses, he said, have educated a large body of skilled adjusters, and their excellence is so marked that in the West several adjusters have been called to more responsible posts of the business. After discussing the relation between political economy and fire insurance, he showed that insurance is the conserver of capital; it does not create anything, but only equalizes the burdens of losses. As the conserver of capital, it should not only help to indemnify losses, but also to inculcate principle in the minds of the assured which would make them careful to prevent losses. The companies should remember that the money intrusted to them is not theirs; it is only given to them in trust for losers by fire, and with this thought neither they nor their adjusters would seek to beat any loser out of any insurance which belonged to him. Only a just and fair proportion of the premiums should be used for the dividends, and the public has a right to insist that the business should be run in an open and public manner. On the other hand, the companies have a right to insist that the insured shall do the best he can to prevent fires and to rescue salvage. It is the public's abstract right and duty to investigate the causes of all fires and punish the incendiaries. Builders should see that their buildings are constructed upon the best principles for immunity from fire. The reader denounced the proposition to tax the companies by the State for any more than enough revenue to operate the Insurance Departments of the State governments. Considering in detail the duties of the adjuster, he contended that a man holding that office should do nothing but adjudge, administering his trust strictly according to the terms of the policies.

C. C. Hine gave a blackboard illustration of a system of isometical drawing, by which any agent could easily make a correct drawing of any building which he might be called upon to write a policy for. It was received with a good deal of favor, and several prominent agents present signified their intention to adopt the system in their offices.

T. H. Smith, of Chicago, read a sketch in rhyme on "The Special Agent," which provoked considerable laughter.

The committee to which was referred that part of the President's address referring to blanket policies offered a resolution to the effect that the Association was opposed to the granting of blanket policies, unless they contained the co-operatiue clause. The report was adopted.

The committee to which was referred that part of the President's address relating to uniform policies reported resolutions to the effect that managers should prepare simple policies which should be easily understood by both the agents and the customer, to the end that litigation might be lessened. The report was adopted.

The committee to which was reported that part of the President's address referring to the schedule system of rating reported a resolution to the effect that the Association approves of the system as methodical, equitable and an improvement on the old system, due allowance to be made for location, water facilities, efficiency of fire departments, and recommending that more time be given to the discussion of this subject at the next meeting. The report was adopted.

Mr. Cunningham, representing the Association of the South, extended a cordial invitation to the Association to attend the next meeting in New Orleans in March.

The following officers were elected for the ensuing year: President, James M. DeCamp, of Cincinnati; Vice-President, Judge C. W. Potter, of Milwaukee; Secretary and Treasurer, Geo. W. Hayes, of Milwaukee (elected for the seventh consecutive time).

The following Executive Committee was elected: Illinois, J. O. Wilson; Ohio, J. A. Weinland; Michigan, J. J. Clark; Indiana, W. H. Seiders; Wisconsin, E. G. Halle; Missouri, W. J. Littlejohn; Iowa, T. J. Zollars; Minnesota, H. L. Moss; Kentucky, J. G. Finnie; Kansas, W. A. Cormany; Nebraska, H. E. Palmer; Colorado, Anthony Sweeney.

It was moved that the ex-Presidents be made ex-officio members of the Executive Committee; carried. After the adoption of a resolution of thanks to the President for the faithful manner in which he had discharged his duties, the Association adjourned *sine die*.

The Ohio State Board.

THE Ohio State board has issued the following stirring call for a meeting at Columbus on September 26:

For the purpose of taking the proper official action upon the recommendations made at the joint meeting of the Executive Committee of the Ohio State Board and representatives of the Local Board Commission, held at Dayton, Ohio, August 15th, and fully set forth in our circular of August 18th, there will be a meeting of the State Board at the Park Hotel, Columbus, O., on Tuesday, September 26, 1882, at ten o'clock A. M., at which time it is earnestly hoped every stock company doing business in Ohio will be represented by some one who will both know the wishes of, and be duly authorized to act for, the company he represents. In making this call we feel that the existing condition of affairs in this State is a stronger appeal to you for your interest in this meeting, and for your attendance, than any words we can use.

This meeting is called for business. "In union there is strength." If the stock companies will all unite in the work under consideration, much good can be done. This movement means war upon non-paying rates and bad practices, but it will not be undertaken unless the name of every stock company doing an agency business in Ohio is on our muster roll.

R. C. Brown, held at Eureka, Nev., under $3000 bail for arson, committed suicide in custody some days since.

MERE MENTION.

—B. B. Myrick is the new manager of the Evansville, Ind., local board.

—The Mutual Benefit Life has ceased doing new business in Indiana.

—S. F. Magurn, general agent of the Ontario branch of the City of London Fire Insurance Company, will sail from Quebec for England on September 16.

—William A. Noyes, of St. Louis, special agent of the American and Mercantile of Boston, for the Western Department, is doing good work for his companies in his field.

—The Norwich Union Accident Insurance Company is the latest competitor for accident insurance in Canada. Alex. Dixon has been given the general agency for the Dominion.

—Fred. S. James, of Chicago, general agent of the Fire Insurance Association and Boston Underwriters, left last Sunday for a three weeks' business and pleasure trip in California.

—The Sun Fire office has engaged the services of W. R. Kerr. Mr. Kerr is a wide-awake, experienced and energetic Western insurance man, and will, doubtless, bring considerable business to the Sun.

—The United States Life having determined to resume active business in Canada, the Dominion Insurance Department has granted it a renewal of license, and M. W. Mills has been given the management.

—The insurance companies threaten that if manifest improvement be not made in the fire alarm system of Troy, N. Y., forthwith, they will cancel existing policies and refuse to write new ones on property in that city.

—A typographical freak caused us to badly mutilate the name of Albo de Bernales, the well-known manager of the United Fire Re-insurance Company, in announcing his arrival on the steamship Bothnia last week.

—The Denver Fire Insurance Company of Denver, Col., a company as to whose financial ability the insurance public needs enlightenment, is said to have paid $30,000 recently on policies insuring against hail, around Fort Collins, Col.

—L. R. Hummel, secretary of the Mahoning Insurance Company of Selin's Grove, a graveyard company whose recent operations are notorious, was convicted, on September 7, for obtaining money under false pretences in his official capacity.

—Geo. H. Cook has been elected secretary of the Franklin Insurance Company of Indianapolis, to succeed W. W. Woollen. Mr. Cook has been for some time special agent of Law's agency in Indiana, and will make a good secretary for the Franklin.

—Frank Livesay has become manager in London of the fire insurance department of De Barnales & Co., insurance agents and brokers. Mr. Livesay was lately sub-manager of the Lion Fire Insurance Company of London. He assumed his new position on September 1.

—James Ayars, of James Ayars & Co., Chicago agents of the Phœnix of Hartford, has just returned home from a few weeks' vacation at Devils Lake, Wis. He is improved in health and returns to his desk for a vigorous fall compaign for the "Time-tried and fire-tested."

—George D. Dornin, of San Franciso, manager of the Pacific Coast Branch of the Lion Fire Insurance Company, attended the meeting of the Fire Underwriters Association of the Northwest last week and extended a cordial invitation to its members to visit the Pacific Coast.

—Judge A. C. Blodgett, well-known to fire underwriters in connection with the Franklin Fire Insurance Company of Philadelphia, and who retired from the services of that company at the time Alfred G. Baker gave up the presidency, has moved to Detroit, to resume the practice of law.

—"A review of the causes which have contributed to the greatness of Liverpool" is the name of the paper read by Cornelius Walford before the International Law Conference in Liverpool recently. The contribution of the great insurance companies was not ignored by Mr. Walford in his treatise.

—Morgan G. Bulkeley, Mayor of Hartford and president of the Ætna Life (in point of greatness, perhaps the latter title should precede the former), has recently given a third excursion to the seaside to fifteen hundred poor women and children, a clam chowder and shore dinner being embraced by the programme. The cost of these excursions has been defrayed by Mr. Bulkeley, at his personal expense.

—L. D. Moody, of Indianapolis, State agent of the Franklin Fire Insurance Company of Philadelphia, met with a severe affliction last week in the death of his son. Mr. Moody was in attendance on the Northwestern Association meeting when he received telegraphic notice of his son's death.

—The midquarter meeting of the Executive Committee of the Insurance Journalists' Asssciation will be held at the office of The American Exchange and Review, in Philadelphia, at 11 o'clock A. M., on September 29. Arrangements will be made at this meeting for the annual meeting of the Association in October.

—The Glens Falls Insurance Company has appointed Miss Mollie Martin to be its agent at Hopkinsville, Ky. The present age is too practical to admit of any philosophizing or idle comment on the appointment of a lady with a cognomen so happily alliterative. We, however, doubt not that Miss Martin will be as effectual in her remittances to the company as any male agent at Hopkinsville, notwithstanding her pretty name.

—Chief Engineer Howell, of the Middletown, Pa., Fire Depariment, caused the arrest of Charles F. Miller recently on the charge of arson. Miller was a member of the volunteer fire department which was in existence in August, 1880, and the authorities have been placed in possession of testimony pointing to his guilt in applying an incendiary torch to a dwelling-house adjoining the house of American Fire Engine Company.

—It is a legal maxim that "the words of a law are not to be construed to extend to acts done or to be done out of the territorial limits of the State, unless the words expressly relate thereto." Robert Sewell bases an opinion, adressed to the managers of foreign companies, on this maxim, arguing that the recent foreign company law passed by the Legislature of New York was not intended to prohibit companies of foreign countries to publish their home statements outside of New York State.

—The National Insurance Convention will be held at the International Hotel, Niagara Falls, on the 4th of October next. The Convention is comprised of the several Insurance Commissioners of the various States. J. L. Clarke, of Massachusetts, is President, John A. McCall, of New York, Vice-President and O. T. Welch, of Kansas, Secretary. The question of fire insurance reserves, which was referred to a committee of five last year, will be a leading topic of discussion; also the requirement of home office statements from foreign companies and industrial insurance and life reserve.

—The Board of Directors of the National Fire Insurance Company of Baltimore recommended recently that the company be closed up, on account of the heavy losses sustained in the agency field, resulting in an impairment of capital. A general meeting of the stockholders will be held September 26, to consider this recommendation. In the event of (what is probable) the winding up of the National, it is said to be the intention of the able president, J. B. Seidenstricker, to start a $100,000 company to operate in the local field. The National had assets of $323.553 on January 1, and will be able to meet its liabilities.

—The Attorney-General has begun an action before Judge Potter at White Plains, charging Receiver Newcomb, of the Atlantic Mutual Life Insurance Company, with malfeasance, and asking for his impeachment and the substitution of a new receiver. The motion will be founded upon the affidavit of James A. Dennison, Deputy Attorney-General, who shows that Newcomb has paid to Henry Smyth, his council, the sum of $22,206.06, said payment being wholly unauthorized and illegal. Mr. Dennison also charges that Newcomb has paid to Smyth $17,493.94 in addition to the above amount, and that $12,393.94 has been paid without any legal sanction. It is alleged that Newcomb has only $78,900 of the original funds, and that only $348,135 have been paid in dividends. It is charged that the receiver has taken as his own allowance $22,000 without legal authorization. Newcomb was appointed five years ago by Judge Westbrook, and he by his action defeated the efforts of the stockholders of the company to put it upon a solid basis. In short, he is charged with wrecking the corporation and being implicated in fraudulently disposing of its assets, amounting to $1,000,000. The Attorney-General has taken special pains to avoid Judge Westbrook, owing to his connection with the history of insurance receiverships in New York State, hence his recourse to Judge Potter.